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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/493,063	01/28/2000	Eiji Morifuji	PM 266202	1728
909	7590	12/16/2003	EXAMINER	
PILLSBURY WINTHROP, LLP			LEE, EUGENE	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2815	

DATE MAILED: 12/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/493,063

Applicant(s)

MORIFUJI, EIJI

Examiner

Eugene Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-11,13 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-11,13 and 16-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/22/03 has been entered.

#### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a plurality of MOSFETs disposed in comb-like shape on the semiconductor shape on the semiconductor substrate form an amplifier stage must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

3. Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper

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dependent form, or rewrite the claim(s) in independent form. Claim 6 is identical to claim 13.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 7 thru 11, 16, 17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 7, it is unclear whether the limitation "this layer" in line 13 is referring to the low resistance layer stated in line 12 or the polysilicon layer stated in line 10. In any case, the Examiner is interpreting "this layer" to be the low resistance layer, however, proper clarification and correction are required.

Also regarding claim 7, it is unclear whether the gate of the MOSFET in line 4 is the same structure as the polysilicon layer provided beneath said signal input pad in line 10. It appears from the applicant's disclosure (see FIG. 6A and 6B wherein element 141 is identified as the gate polysilicon layer) that they are, however, claim 7 also states a signal input pad connected to the gate in line 4 and an interconnection being connected to a polysilicon layer in lines 10-11 but also states that said interconnection being electrically isolated from said signal input pad in line 8-9. If the gate and the polysilicon layer are the same structure, it is not possible for the interconnection to be electrically isolated from said signal input pad.

Claims 16 and 17 recites the limitation "first interconnection and said second interconnection" in line 2 of said claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 thru 4, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jarstad et al. 6,472,723 in view of Iguchi et al. 5,744,394. Jarstad discloses (see, for example, FIG. 1C) a semiconductor device comprising a substrate 101, MOSFET, gate, metal (signal input pad), source/drain areas (high concentration impurity diffused region) 107, and interconnection 119. Jarstad does not disclose a low resistance layer provided on the upper surface of the high concentration impurity diffusion region and directly under the signal input pad. However, Iguchi discloses (see, for example, Fig. 6) a semiconductor device comprising an n-type diffusion region (high concentration impurity diffused region) 35 and a Ti silicide layer (low resistance layer) 35. In column 10, lines 29-36, Iguchi discloses that the Ti silicide layer reduces the contact resistance. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include a low resistance layer provided on the upper surface of the high concentration impurity diffusion region and directly under the signal input pad in order to reduce the contact resistance.

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8. Insofar as definite, claims 7 thru 11, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jarstad et al. '723 in view of Iguchi et al. '394 as applied to claims 1-4, 16, and 18 above, and further in view of Hsu et al. 5,241,203. Jarstad in view of Iguchi does not disclose a polysilicon layer provided beneath said signal input pad. However, Hsu discloses (see, for example, FIG. 10) a semiconductor device comprising a heavily doped (high concentration impurity diffused region) 44B and a polysilicon layer 20. In column 4, lines 3-9, Hsu discloses that the polysilicon layer forms the source and drain regions. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include the polysilicon layer in order to form the source and drain regions efficiently.

9. Claims 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jarstad et al. '723 in view of Iguchi et al. '394 as applied to claims 1-4, 16, and 18 above, and further in view of Battersby et al. '065. Jarstad in view of Iguchi does not disclose a plurality of MOSFETs disposed in a comb-like shape on the semiconductor substrate forming an amplifier stage. However, Battersby discloses (see, for example, FIG. 2) MOSFETs formed in a comb-shaped structure as an amplifier element. Battersby teaches that this comb-shaped structure reduces leakage currents and parasitic capacitances in amplifier elements. See, for example, abstract. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use a comb-shaped structure so that leakage current and parasitic capacitances are reduced in amplifier elements.

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### INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 703-305-5695. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Eugene Lee  
December 10, 2003

  
**GEORGE ECKERT**  
**PRIMARY EXAMINER**